TO DO OR NOT TO DO THE DENTAL EXTRACTION IN CANCER PATIENTS, WHO RECEIVE BONE TARGETED AGENTS (BTAS):

A SYSTEMATIC REVIEW, BSG, MASCC, PART 1.

Faculty Disclosure

<table>
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<tr>
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<th>No, nothing to disclose</th>
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Yes, please specify:
E. Vardas¹, O. Nicolatou-Galitis¹, E. Papadopoulou¹, M. Kouri¹, D. Galiti², S. Torres³, V. Fusco⁴, C. Estilo⁵, D. Saunders⁶, J.J. Body⁷, C. Migliorati⁸, R. Lalla⁹.

accepted as a Proffered Paper
Dental extraction is considered the main local risk factor (45%-70%) for the development of ONJ in cancer patients who receive BTAs. However, the actual risk of ONJ after dental extraction is not clear.

Introducing:
Dr. Migliorati and his colleagues are currently collaborating with a group in Greece on this topic. 

“We want to publish proof that dental extractions do not cause osteonecrosis of the jaw but expose the alveolar bone, which may already be necrotic,” he said.

Osteonecrosis of the Jaw

- Currently, several agents are recognized as being associated with osteonecrosis of the jaw, including bisphosphonates, denosumab, and antiangiogenics.
- Early diagnosis of osteonecrosis of the jaw leads to easier management.
- Medical treatment is often recommended for early-stage osteonecrosis of the jaw, with surgery often indicated for more advanced-stage disease.
- Dental extractions do not cause osteonecrosis of the jaw but expose the alveolar bone, which may already be necrotic.
To review the risk of ONJ development following dental extractions in cancer patients who receive BTA.

Aim of the study:

MASCC Bone Study Group

Leadership
Chair: Ourania Nikolatou-Galitis, DDS - Greece
Vice-Chair: Winston Tan, MD - USA
Vice-Chair: Beatrice Edwards, MD - USA

For more information or to contact the Study Group Leaders, please send an email to mascc.office@mascc.org.

Study Group Minutes
2017 Minutes - Annual Meeting - Washington, D.C.

Mission
The mission of the MASCC Bone Study Group is to conduct research and develop guidelines for the prevention and treatment of skeletal complications in patients with cancer. Skeletal complications arise as a result of both the disease and the treatments for various types of cancer (e.g., aromatase inhibitors and androgen-deprivation therapy). The Bone Study Group is an interdisciplinary effort with the objective of raising awareness of the skeletal complications common in people with cancer. These complications can shorten survival and have a significant impact on quality of life.

Objectives
Inclusion criteria:
• Articles which report on patients who receive ONJ-related medications for cancer
• Clinical research papers testing the “specific questions”
• Articles published in a peer-reviewed journal,
• Articles indexed in Medline between 1st January 2009 to 31st December 2016
• Adult patients

Exclusion criteria:
• Articles, which report on patients, who receive ONJ-related medications for osteoporosis or other benign disease, articles, which include patients with cancer and patients with benign conditions, assessed as one group
• Articles that do not report testing on the “specific questions
• Literature reviews (literature reviews would be checked for articles interesting to our review)
• Articles published in a language other than English - abstracts presented in Meetings - not full article published.
• Pubmed and Embase were searched. A manual search of the bibliography of identified published articles was also performed. Personal communication with relevant experts was conducted.
• The published literature was critically evaluated and graded based on quality of evidence.
• All assessments were made by two reviewers.
• An Excel form, kindly provided by the MASCC Mucositis Study Group, was modified accordingly for our review.
Results

6249 retrieved titles

579 selected titles

144 selected abstracts

106 full articles selected

60 included articles

4 articles ONJ related to dental extractions

ONJ related to non-antiresorptive targeted therapies

ONJ management
Four articles (2 case series, 1 retrospective and one prospective study)

255 dental extractions were performed in 126 patients (mean age 61.7 years).

All patients received zoledronic acid; 3 patients also received pamidronate.

The reason for dental extractions was available in 92 of 255 cases (36.1%) either due to periodontal disease or dental caries.

Zoledronic acid was discontinued in 64 (50.8%) patients during 92 extractions (mean time 47.1 days).

**Antibiotics were administrated pre- and postoperatively in all patients.**

156 (61.2%) extractions were surgically performed, while 99 (38.8%) were simple extractions.

LLLT was applied in 30 (11.8%) extraction sites.

Healing time was available in 57 (22.4%) extractions and ranged between 7 to 71 days.

ONJ developed in 14 patients (11.2%).
<table>
<thead>
<tr>
<th>Author</th>
<th>Type of cancer</th>
<th>N (%</th>
<th>Comorbidities</th>
<th>ECOG performance status N (%)</th>
<th>Smoker N (%)</th>
<th>Chemotherapy N (%)</th>
<th>Corticosteroids N (%)</th>
<th>Antiresorptive therapy N (%)</th>
<th>Duration median time (range)</th>
<th>Reason for antiresorptive therapy</th>
<th>Conclusion of the study</th>
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<tbody>
<tr>
<td>Mücke 2016</td>
<td>prostate cancer</td>
<td>253 (100%)</td>
<td>Not reported</td>
<td>0</td>
<td>group A: 64 (39%)</td>
<td>0</td>
<td>group B: 36 (40%)</td>
<td>1</td>
<td>≥ 2</td>
<td>group A: 95 (58.1%)</td>
<td>≥ 2</td>
</tr>
<tr>
<td>kato 2013</td>
<td>Breast cancer</td>
<td>11 (55%)</td>
<td>Multiple Myeloma</td>
<td>5 (25%)</td>
<td>Prostate Cancer</td>
<td>3 (15%)</td>
<td>Non-Hodgkin Lymphoma</td>
<td>1 (5%)</td>
<td></td>
<td>09 (45%)</td>
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<tr>
<td>Kan 2011</td>
<td>Breast Cancer</td>
<td>1 (50%)</td>
<td>Multiple Myeloma</td>
<td>1 (50%)</td>
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<tr>
<td>Ferlito 2011</td>
<td>Multiple myeloma</td>
<td>28 (65.1%)</td>
<td>Breast cancer</td>
<td>8 (18.6%)</td>
<td>Prostate cancer</td>
<td>5 (11.6%)</td>
<td>Lung cancer</td>
<td>2 (4.7%)</td>
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Issues to address:

- Antiresorptives
- Targeted therapies interruption
- Redose of antiresorptives/targeted therapies
- Dental extraction wound management